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DID THE TRADE REFORM BRING ABOUT GENDER WAGE EQUALITY IN MEXICAN INDUSTRY?

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INTRODUCTION

Important debate has developed on the effects of globalization and trade on women's employment, wages and welfare. Neoclassical theory predicts that integration into global markets will have a beneficial effect reducing the gender wage gap in developing countries. Under the Hecksher-Ohlin theory, production will relocate to those sectors that intensively use the relatively abundant factor of production. Since semi- and unskilled labor in Mexico is abundant relative to skilled labor, the demand for the relatively abundant factor should increase and, according to the Stolper-Samuelson theory, the relative price of that factor will increase.

On one hand, an increase in export activities will generate economic growth and employment, with a growing number of women being absorbed into export-oriented industries. On the other, both potential exporters and firms producing for the domestic market must respond to the increased pressure to engage in cost-cutting measures since trade liberalization eliminates barriers existing under protectionist development

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patterns. Thus, according to Becker's theory, neoclassical theory argues that it becomes too costly for firms to discriminate; hence the discriminatory wage gender gap will eventually disappear. Also, in as much as women gravitate toward lower-skilled jobs and men cluster toward higher-skilled jobs, neoclassical theory predicts that trade-induced changes in skill demand will reduce pay differentials between men and women.

Feminist economists have argued that non-convergence between women and men is possible under trade liberalization (Cagatay, 2000). So far evidence is mixed. On one hand In a cross-section analysis of 80 countries between 1983 and 1999, Oostendorp (2004) finds that the occupational gender gap appears to narrow with increases in per capita GDP, and that there is a significant narrowing impact of trade and FDI net inflows on the occupational gender gap for low-skilled occupations (both in poorer and wealthier countries) and for high-skilled occupations in wealthier countries. The author finds no evidence, however, that either trade or FDI widen the gender gap in high-skilled occupations in poorer countries, possibly reflecting skill complementarities. On the other, Berik, Van der Meulen and Zveglich (2004) argue that persistent discrimination is consistent with a competitive economy, since wages are determined not only by worker skills but also job characteristics, which shape the respective bargaining power of groups of workers. Trade competition may cause the decline of certain groups of industries and rise of others, leaving workers in declining industries at a disadvantage in bargaining for higher wages in new jobs. Therefore, far from becoming an equalizing force, trade competition may well cause dislocations that widen wage disparities among groups of workers. There are some differences between the case of Taiwan and Korea. In the first country, industry competitiveness associated with imports appears to have a stronger impact on the residual gap than competitiveness associated with exports. Results for Korea indicate that higher export ratios in

concentrated industries are positively associated with the residual gender wage gap. Although the precision of the Korean results is not as high as it is for Taiwan, the Korean results similarly do not support the dynamic implications of Becker's theory of discrimination.

Seguino (2000), on her part, argues that gender wage inequality has stimulated growth, with Asian economies that disadvantaged women the most growing the fastest from 1975 to 1990. Low female wages have spurred investment and exports by lowering unit labor costs, providing the foreign exchange to purchase capital and intermediate goods which raise productivity and growth rates.

Using a different model which not only analyses the gender wage gap but also wage determinants of men and women, for the case of Taiwan, Berik (2000) finds that greater export orientation adversely affects both men's and women's wages, yet it reduces gender wage inequality because male employees face a greater wage penalty than women. As expected, greater capital intensity improves both men's and women's wages, but the shift toward salaried jobs improves men's wages while reducing wages of women. Her result concerning the relative magnitudes of the impact of female share on men's and women's wages is surprising: men are more adversely affected than women from working in industries with a higher share of women. Also, she found conflicting effects of the wage worker versus salary worker ratio on men's and women's wages. While women benefit from being employed in industries with a higher wage–salary worker ratio, men are disadvantaged by it. As a result, the wage–salary worker ratio is strongly positively related to the gender wage ratio. This suggests that the decline in the wage–salary worker ratio is associated with a new pattern of occupational segregation among wage workers that places women in lower-paying jobs compared to men.

Twenty years after trade liberalization, the Mexican economy is fully integrated into the international market. In the Mexican case, various studies have shown that the distribution of gains from trade has been unequal both among industries and among workers (Hanson, 2003; Cragg and Epelbaum, 1996). Industries are heterogeneous and have different technological profiles and performance indicators. Market structure has also remained highly concentrated (Domínguez y Brown, 2003). There is evidence of a decline in wages as well as greater wage disparity and inequality after trade liberalization during the 1980s and 1990s, although slight improvement occurred between 1998 and 2003. Wage inequality is also evident among sectors and among regions. The other face of inequality is the upward trend of white-collar worker earnings which is the result of redistribution of the labor force between skilled and unskilled labor between 1988 and the late 1990s due to the increase in skilled versus unskilled employment. The question arises as to how trade affects women`s wages and gender inequality. This question has not been sufficiently studied.

Artecona and Cunningham (2002) made research to test whether increased openness in Mexico induced employers to reduce discrimination against women, by estimating the differential effect of increased imports on concentrated versus competitive industries in the 1977–1994 period. The authors find that women were paid lower wages than men in protected industries in the local and in the international market in the pre-trade reform period in 1987. With weakly significant results, they conclude that lower trade barriers indirectly improve women's remuneration relative to men's. In the *maquiladora* sector Fleck (2003) finds three interesting trends in the 1990s. The first relates to the persistence of an interindustry wage gap which is correlated with industry characteristics including the female share in the working force. Second she finds a gender wage gap within industries which is associated positively by capital

intensity and female share in employment and negatively by the location of firms away from the border which may be explained by an abundant supply of men in non border areas. Third, she explains defemenization of *maquila* employment due to a supply constraint based on a rising female labor force participation rate that is nonetheless outpaced by the speed at which the sector is growing.

This study aims to contribute to the feminist economics project of engendering the investigation of the export-led growth model in the national manufacturing sector (not including maquila, but contributing with half of manufacturing exports) in the period between 2001 and 2005 . We will show that trade liberalization brought about some achievements in macroeconomic indicators, but resulted in great failures in such important aspects as employment generation and sustainable output growth. Moreover, the expectation of better wages and equality was not fulfilled. We review several studies which show that there was a skill trade enhanced effect which resulted in an increase in the white-collar to blue-collar wage ratio which generated wage differentials between exporting and non-exporting firms.

Finally, using an econometric model to analyze the determinants of male and female wages by export orientation and other characteristics of the industrial restructuring occurring in Mexico, we aim to show that average wages are determined by the institutional characteristics of the firm, and technology, conditioning the respective bargaining power of groups of workers as well as macroeconomic conditions. We provide consistent evidence that export orientation is positively associated with male-to-female wage ratios, in other words it increases gender inequality, contrary to the expectations if neoclassical theory. Also we find that the female share in total industry employment and growth are associated with an increase the wage gender gap ratio. In contrast, in spite of being positively associated with wages in the male and

female regressions, both the capital labor ratio and the foreign firms` share in the value of output decrease the male to female wage ratio.

1. TRADE OPENING AND MACROECONOMIC BALANCES

During the 1980s important changes in Mexican policy transformed the economy from the previous import substitution model to one of an open economy. Mexico enters the GATT in 1986, reduces trade tariffs, and eliminates non-tariff restrictions all within a short period. In about three years Mexico became one of the world's most open economies. These measures would be complemented later with the signing of free trade agreements, of which NAFTA is by far the most important. Several policy changes were implemented to favor more fluid market behavior aiming to stimulate industrial firms to improve productive efficiency. Examples include the removal of subsidies and deregulation of the economy, with a notable example occurring in the transportation sector. Rules on foreign investment and technological transfer were eased in order to attract greater investment flows.[2] Publicly-held companies began a process of privatization, with the gross-production share of public and state corporations within the manufacturing sector dropping from 16.3% in 1988 to 10% in 1993.[3] Banks which had been expropriated in 1982 were privatized again, and today all but one are foreign owned.

Lastly, the financial sector was opened. The Mexican stock market was internationalised after December 1989. A second phase began in July 1993 with the reform of the Stock Market Law, and starting in 1997 a legal and regulatory framework

[2] The Foreign Investment Law of 2003 eliminated all sector-specific restrictions of the prior 1973 law, with two exceptions reserved for the State on oil and electricity generation and distribution.
[3] Industrial Censuses, 1988, 1993, INEGI.

was drawn up to deepen linkages with international stock markets, allowing it to compete for foreign resources (Cardero, 2000).

An assessment of the effects of trade liberalization policy shows mixed results. There were some impressive achievements, particularly during the initial years of structural reforms. Key macroeconomic indicators were transformed. The public deficit declined steadily to 3.97% of GDP. Inflationary pressures started receding in 1988 with the annual consumer price index falling from an average price increase of 78.25% between 1980 and 1987 to 20% from 1994 to 2000 and 4.5% from 2001 to 2006 (Table 1). Liberalization of trade was followed by rapid expansion of foreign trade after 1988 and consolidation of a trade pattern in which manufacturing exports had the largest share (90% of total exports). Export growth rates passed from a negative rate between 1981 and 1986 to 6.5% between 1987 and 1993 and finally to 16.58% in the period 1994-2000, with the beginning of NAFTA and reinforced by the devaluation in the same year. At the same time, the expansion of maquiladora accelerated and its share in GDP increased from 4.2% in 1988 to 7.6% in 2003, contributing around 50% of total manufacturing exports.

The above were indeed important achievements. However, other indicators were not as positive. This dynamism in exports was linked to growth of imports which remained around 12% in the early 1980s and rose to 18% from 1993 to 2000. The result was substitution of imported imputs for domestically produced intermediates, the first doubling their share in GDP from 11.3% in 1990 to 20.6% in 2003 (Moreno-Brid, Santamaría and Rivas Valdivia, 2005). The last study presents estimates of the growing burden of intermediate imported products associated with exports which rose from 52.5% in 1993 to 71.9% in 2000 and 65.2% in 2003, confirming evidence found by Feenstra and Hanson (2001) for other countries (Aroche and Cardero, 2007).

Up to now, the objective of increasing the growth rate of output has been achieved only in very moderate and unstable terms. Between 1988 and 1994, GDP grew at a rate of 3.4%, at 3.6%, from 1994 to 2000 and 2.31% 2001 and 2006 (Table 1). Several reasons explain the lack of dynamism of the Mexican economy. First, contrary to neoclassical expectations, the domestic savings coefficient did not increase, making the economy dependent on continuous flow of capital from abroad and limiting economic growth. Second, evidence from various studies shows that the government's restrictive fiscal policy to fight inflation led to tendency for the Mexican peso to become overvalued, affecting current account balances, thereby making exports less competitive (Ros and Lustig, 2000; Perrotini, 2008; Mantey, 2005).

After 2001, due to recession in the US economy and the Chinese competition in the North American market exports and imports decelerated (7.4% and 7.20% in the years 2001-2006), but the share of imports in GDP did not fall, passing from an average of 16.5% in the years 1994-1997 to 18.4% in 2001-2006 (Moreno-Brid, Santamaría and Rivas Valdivia, 2005). As Hanson (2003) explains, Mexico's comparative advantage in low-skilled activities is not strong enough to be competitive in labor intensive industries. While Mexico may have such a comparative advantage relative to the United States, it probably does not relative to China or South Asia.

Table 1. Selected indicators of the Mexican Economy

	1988-1993	1994-2000	2001-2006
GDP (rate of growth)[1]	3.4	3.6	2.31[1]
Average rate of inflation	21.01[2]	20.33	4.44
Total Employment (growth rate)[3]	2.7%	2.2%	1.16[4]
Manufacturing[1]	1.8%	3.99%	-1.93[1]
Exports[1]		16.4%	7.47
Imports		13.9%	7.20
Unemployment rate[3]	3.0%	3.9%	3.37
Average real wage index (1994=100)	112	83	76
% of employment earning less than minimum wage [3]	16.9%	14%	10.3

Sources: 1) National Accounts, INEGI; 2) NAFIN, La Economía Mexicana en Cifras, Nacional Financiera; 3) National Survey on Employment and Occupation, INEGI.

In relation to employment generation, several authors have observed a structural break in the relationship between output and employment. Until 1987 employment moved relatively parallel to output. After that year, however, the relation was totally lost because the economy was unable to create new formal employment (López, 2001). Employment in manufactures has grown, but not in the rest of the economy. The average growth rate of total employment was 1.1% between 1980 and 1994, 2.2% between 1994 and 2000, and 1.16% in the years between 2001 and 2006, while the manufacturing employment growth rate reached 4% between 1994 and 2000, from a low of –0.1% in the 1980s and falling to -1.93% between 2001 and 2006.

According to Ros and Bouillon (2001), overvaluation of Mexican currency has affected both growth and employment creation, particularly in the manufacturing sector. Increasing import penetrations have produced a profit squeeze. The authors distinguish two different responses. In the textile, wood, cement and glass industries, many firms were forced out due to competition from imports. Those who stayed responded with

productivity measures. Import penetration in these industries is therefore inversely correlated with growth and employment.

In those industries where firms had high export and import coefficients (metal mechanics linked to automotive industries, among others), firms responded to the profit squeeze by importing labor saving techniques[5] necessary for success in the international markets. Technological changes linked to import penetration therefore almost always translated into higher productivity and GDP. However, the acceleration of productivity in manufacturing did not diffuse to the economy as a whole given the lack of demand linkages of these industries with producers of domestic inputs.

In summary, there are some achievements in macroeconomic indicators but great failures in such important aspects as employment generation and sustainable output growth. As will be shown in the next section, trade also failed to bring about greater equality.

2. TRADE AND WAGES AND EQUALITY

As may be observed in Table 1, the average wage index dropped from 112 in the years 1988-1993 to 76 in 2001-2006. Wage inequality is also evident between different sectors or regions. Earnings in agriculture, construction and commerce have remained below the economy's average for a considerable period. Also, wage gains tended to favour northern states, which is the region most exposed to international trade, FDI, and/or opportunities for migration to the United States, and with the highest wages (Hanson, 2003). On the other hand, there is evidence of the rising trend of white-collar worker earnings which illustrates the redistribution between skilled and unskilled labor earnings that took place between 1988 and 1994. Two different sources of inequality are

[5] For evidence on the use of new microelectronics-based technologies, just-in-time systems, and flexible organization of production, see: (Domínguez and Brown, 1998).

indicated. The first comes from intersectoral employment shifts from unskilled to skill-intensive industries. The increase in skilled versus unskilled employment is the second. Several studies have addressed this issue (Cragg and Epelbaum, 1996) and there is a consensus on the second explanation as the main factor of employment inequality, i.e., the shift in labor demand in favor of skilled workers and the increasing skill premium can be explained only to a small extent by intersectoral employment shifts from unskilled to skill-intensive industries.

Based on Census data on earnings and employment, Hanson (2003) shows that despite the increases in average educational levels, hourly wages fell in the 1990s from 1.33 to 1.11 USD for males and 1.24 to 1.13 for females. In contrast, participation rates increased, especially for females over the 1990s (from 20.7% in 1990 to 30.9%). Lopez (2001) argues that the stagnation of formal employment stimulated the rise in the participation ratio in the larger cities and boosted employment in the informal sector where women have an important share, as will be seen later. The interpretation is that in spite of falling wages, the participation rates increased family income by increasing the number of income-earners per family (Cortés, 2000).[6]

This evidence contradicts the postulates of the Stolper–Samuelson theorem, according to which more trade liberalization should increase demand for the abundant factor, following the law of comparative advantage. Given that the abundant factor in the Mexican economy was unskilled labor, demand would move away from the scarce factor, skilled labor, to the abundant one, unskilled labor, raising low-skill wages relative to high-skill wages, leading toward factor price equalization and thus reducing inequality.

[6] Although there are no official estimates of informal employment, different studies point to a range between 40 and 56% of the working population.

There are several arguments posed against the notion that trade may bring greater equality. The first refers to the skill enhancing hypothesis. According to Ross and Bouillon (2001), in their study on the effects of trade on growth equity and poverty in Mexico, the skill premium is the result of a change in composition of demand in the Mexican economy and is not supply-induced. Industries displacing blue-collar workers relative to white-collar employees show the highest wage-salary ratios. If the substitution of skilled for unskilled labor were supply-induced then the correlation would be negative. This demand for skill comes from the fall in prices of imported machinery incorporating new technological trends which were installed in export firms, along with complementary organizational changes. In his analysis of the factors driving changes in income distribution, Angeles–Castro (2007) shows that marginal returns on education increased in Mexico, confirming the results of Feenstra and Hanson (2001). As a possible explanation of this trend, he presents evidence from data for individuals showing that demand for workers with tertiary education increased markedly, and faster than supply, whereas relative demand for unskilled individuals (only primary education) fell at a faster rate than supply. He adduces that relative employment and demand for skill also increased in the service sector contributing to explain income disparity, given that the wage gap between the service and the agricultural sectors expanded.

The second argument refers to the composition effect of imports of intermediates. As mentioned in section 1, there is evidence regarding the growing burden of intermediate imported products associated with exports in the Mexican economy. According to Feenstra and Hanson (2001), this production sharing effect or outsourcing affects labor demand in import-competing industries, but also affects labor demand in the industries using the inputs. For this reason, trade in intermediate inputs can have an impact on wages and employment that is much greater than that of trade in

final consumer goods. They argue that trade in inputs has much the same impact on labor demand as does skill-biased technological change: *both* of these will shift demand away from low-skilled activities, while raising relative demand and wages of the higher skilled.

The decline of unionized labor is a third factor behind inequality. According to Angeles-Castro (2007), the unionization rate dropped from 24.4 percent to 15.5 percent between 1984 and 1998, and after controlling for age, gender, sector, and educational level, he shows that the wage gap between union and non-union workers declined, the Gini coefficient being larger within the non-unionized sector. In this sense, he argues that a large number of workers moved away from unions and entered a non-union sector, characterized by diverse and flexible wages and higher Gini coefficients, representing a source of inequality.

It is known that the rise in individual Gini coefficient reversed between 1998 and 2002. Angeles-Castro (2007) interprets this on the grounds that the skill premium began to reverse around 1994 because the increase in supply of skilled individuals accelerated, whereas the increase in skill demand slowed down; on the other hand, demand for unskilled individuals continued to fall although at a lower pace, and the fall in supply accelerated in relative terms. Finally, around 1998, the wage gap between union and non-union workers peaked and then began to fall, and the fall in the unionization rate stopped and slightly reversed. Thus, equality in this case implies a trend toward equalization of wages, but on a lower level. It therefore can be concluded that the hopes aroused regarding the possibility that trade liberalization would bring better living conditions and equality, were not fulfilled. In sum, emphasis on market-friendly macroeconomic and strategies and the industrial restructuring taking place in Mexico in recent years has resulted in deleterious effects on growth, employment and inequality. It

rests to be analyzed how this process has affected women´s wages and the gender wage gap.

3. TRADE LIBERALIZATION AND GENDER INEQUALITIES IN THE MEXICAN ECONOMY

The incorporation of women within the labor force accelerated after 1970. According to the National Employment Survey, women's rate of participation, estimated at 17.6% in 1970, reached 34% in 2000. The themes of women's presence in the economy and gender inequalities have been studied by Rendón (2003) and (Oliveira and Eternod, 2000) with a historic approach. More recently, Cardero (1999, 2003), Barrón (1999), Gómez Luna (1999), and Guzman (2001) have examined the impact of trade on the female labor force, showing an increasing participation in exporting industries, mainly maquiladora, textile and automotive sectors. This section aims to provide an overview of the characteristics of women's presence and participation in the economy, particularly in the manufacturing sector, focusing on horizontal and vertical gender segregation and wage gender disparities.

As part of the urbanization process, there was a shift from agricultural employment to other activities as may be gathered form table 2. Thus, the share of women's labor in agriculture declined from 11.02% in the years 1991-1995 to 5.69% in 2001-2006, and the percentage of the female labor force in the industrial sector (mining, manufacturing, and electricity generation) rose from 16.74% to 19.12% in the same periods. By all means, the most outstanding change is the relative decline of women's labor force in personal services, from 36% in 1991-1995 to 20.2% in the 2001-2006 period, while increasing in other sectors like communications and transport, from 1.46% to 17.34%, and financial, professional and social services, from 3.8% to

7.7%. In spite of all changes, we cannot neglect the fact that women have been customarily located in trade and commerce and at the beginning of the 21st century they are still there: 75% of the female labor force, 49% in the service sector and 26% in commerce where informal sector predominates, compared to around 50% of the male labor force (15.1% and 34.9% for commerce and services, respectively)

Table 2

Distribution of labor force by economic activity and gender %

	Men			Women		
	91-95	96-00	2001-06	91-95	96-00	2001-06
TOTAL	68,96	66,56	64,72	31,04	33,44	35,28
Agriculture and cattle rasing	32,96	27,00	22,23	11,02	9,64	5,69
Mining, transformation industry and electricity generation	16,24	18,36	17,42	16,74	19,52	19,12
Construction	8,08	7,99	10,46	0,54	0,43	0,56
Commerce	13,24	13,89	15,11	25,77	24,17	26,07
Transport and communications	5,39	5,85	15,42	1,14	1,18	17,34
Public administration and defense	3,99	4,49	3,03	3,96	4,09	2,76
Financial, professional and social services	2,91	3,72	4,70	3,88	4,23	7,77
Personal services	16,44	18,17	10,71	36,70	36,48	20,25
Non specified	0,74	0,52	0,93	0,25	0,26	0,43

Source: INEGI, National Employment Surveys, several years

Although the academic level of the female workforce is slightly higher than that of their male counterparts, most female employees held lower-level positions. Taking into account women's average share (35%), 32% of the female workforce has not completed elementary school, while 38% has at least a secondary school degree and 39% an undergraduate colledge degree or higher. While men's share as employers is 5.4%, women's is 1.9%. In contrast, the percentage of female workers receiving no remuneration is 13.2% compared to 7% of working men. Self-employed men make up 24.9% of the male labor force, while self-employed women account for only 20.9% of working women. Finally, 59% of total women employed are salaried workers versus 55.6% of men. The last column of Table 3 illustrates the magnitudes of disparity by

employment category, the feminization ratio is largest among non-remunerated workers (98%) and salaried workers (55.%).

Table 3

Distribution of labor force by employment category and women's share in total employment: 2000

%

Position	Total	Men	Women	Feminization ratio
Total	100	100	100	
Employers	4.2	5.4	1.9	18.0
Self employed	23.5	24.9	20.9	43.7
Salaried workers	56.8	55.6	59.0	55.0
Piecework	6.3	7.1	4.9	36.0
With no remuneration	9.1	7.0	13.2	98.0

Source: INEGI, National Employment Survey, 2000, as cited by Cardero (2003), p.440

Women's presence in traditional manufacturing branches has always been important. For example, since the beginning of the 20th century, women had an important share in textiles, palm knitting, and related handicrafts (Oliveira and Eternod, 2000). But in general, women's share in industry has been low (19% in 1970). In the late seventies this share in industry began to increase, reaching 37% in 2007. According to ENESTYC (2005), the industrial sectors in which women's share in employment is highest are: metallic products, machinery and equipment (30.6%), textiles (25.2%), chemical (16%), and food and beverages (15.8%).

Within manufacturing, *maquiladora* firms have had the greatest women's share in employment. In the 1970s this share was approximately 66% (Cardero, 1999). In spite of high growth in the number of women employed, the average annual

employment rate for women has always been lower than that of men. While in 1980 women accounted for 80% of employment in 2003 this percentage is 48%.

Table 4

Average distribution of labor force in manufacturing per job category: 2001 and 2005.

(%)

	Men	Women	Women`s share
Managers	0.02	0.01	0.16
Employees	0.25	0.24	0.27
Skilled workers	0.28	0.18	0.19
General workers	0.45	0.57	0.33
Total	1.00	1.00	0.27

Source: National Survey on Employment, Wages, Technology and Training (ENESTYC), 2001 and 2005, INEGI.

Together with horizontal segregation, we find vertical gender segregation in industry. Most women work as part of the blue-collar labor force (57%). In fact, only 1% of total female labor force is in management, 24% works as administrative staff, and 18% as skilled workers, compared to 2%, 25% and 28% respectively in these categories for men (Table 4).

Table 5

Hourly income among men and women, 2005.

(pesos)

	Total	Agriculture and cattle raising	industry	Commerce and services	Non specified
2005					
Total	26,13	14,23	23,93	29,38	17,74
Hombre	26,62	13,98	25,59	31,35	17,24
Mujer	25,25	17,05	19,01	27,11	19,02
m/h	0,95	1,25	0,74	0,86	1,11

Source: Inegi, National Employment Survey, 2005

As Cardero (2003) points out, the asymmetries between men and women in the labor market and the negative consequences of feminization and segregation on women's conditions are heavily perceived in the unequal levels of male versus female incomes and in the persistency of the gender wage gap. We have already seen that women over-represent men in the percentage working without receiving any pay. For every hour worked , men receive an average of 9% more in average for the whole economy. Inequality is highest in the industrial sector, in which men make almost 38% more per hour.(Table 5). Following Fleck (2003) the production female workers earned *maquiladora* sector 5.4% less than male workers in 1998.

In summary, women's role in the Mexican economy is contradictory: while there is a large share of female labor force in services and commerce, in which informal employment plays an important part, their share in the *maquiladora* sector and other exporting industries is above average. Contrary to expectations, evidence for recent years shows that increasing trade has not changed the fact that women predominate in lower-end industrial jobs. Below we pass on to the analysis of the impact of trade on wages.

4. DETERMINANTS OF GENDER WAGE INEQUALITY: ESTIMATION AND RESULTS

As may be recalled from prior sections trade liberalization has been accompanied by fast exports and a process of industrial restructuring taking place mostly in foreign firms and large local ones which took the advantage of the fall in prices of imported machinery to incorporate new technological trends. This brought about increasing demand for skilled labor and higher capital labor ratios. However, there is evidence of a decline in wages as well as greater wage disparity and inequality after trade liberalization during the 1980s and 1990s, although slight improvement occurred between 1998 and 2003.

The empirical model we estimated aims to identify, in the light of an increase in women's share in industry, how trade liberalization and the industrial restructuring process accompanying it, affect wages of men and women as well as the gender gap. We followed the approach proposed by (Berik, 2000), given several advantages offered by this methodology. This approach provides a more adequate exploration of the gender dimension of wage inequality, highlighting effects of industry characteristics such as the foreign investment share in industry output (FDI), the wage to salary workers, women's share, the capital labor ratio and export orientation (export/output). We included the growth rate of gross production value of each industry to capture macroeconomic changes; for 2001 we considered the growth rate between 1997 and 2001 and for 2005 the growth rate between 2001 and 2005. Since this methodology analyses both wages for men and women as well as the gender wage ratio, this approach provides more information than other methodologies which only use the gender wage ratio.

The empirical model consists of a two independent wage equations for women and men, and a gender wage ratio equation derived from these two equations. The

econometric specification used to analyze the determinants of trade and globalization on gender wage inequality is presented below:

$$\ln(Wage)_{it} = \beta_0 + \beta_1 (Export/Output)it + \beta_2 (FDI/GDP)_{it} + \beta_3(Capital/Labor)it + \beta_4 (Wage/Salaried)it + \beta_5(Female\ Share)it + \beta_7(Gross\ value\ of\ production)\ it + u_{it}$$

The industrial subscript i is the number of industrial classes (46 classes for each year); the year is distinguished by t. Given the decision of the National Institute of Geography and Statistics to reclassify industrial classes and add new ones, the building of a panel data base[7] required us to take in account only those industrial classes present in both years. The dependent variable wage is the average wage of women and men for each class weighted by the share of each occupation (directors, employees and workers) in the establishment employment, and gender wage gap is the ratio of male wage to female wage. The descriptive statistics of the sample and details of the construction of each variable may be consulted in the annex.

INFORMATION SOURCES

The source of information for the empirical model is the National Survey on Employment, Wages, Technology and Training (ENESTYC) for the years 2001 and 2005. The ENESTYC is an official survey carried out by the National Institute of Statistics, Geography and Informatics INEGI. It contains nationally representative information on the characteristics of manufacture's technology and productive organization, amount and type of employment generated, occupational structure, pay and training. It provides data on average wages of men and women, numbers of workers per educational levels

[7] We thank the suggestion of one anonymous referee to work with the same industrial classes which allowed us to build this panel model.

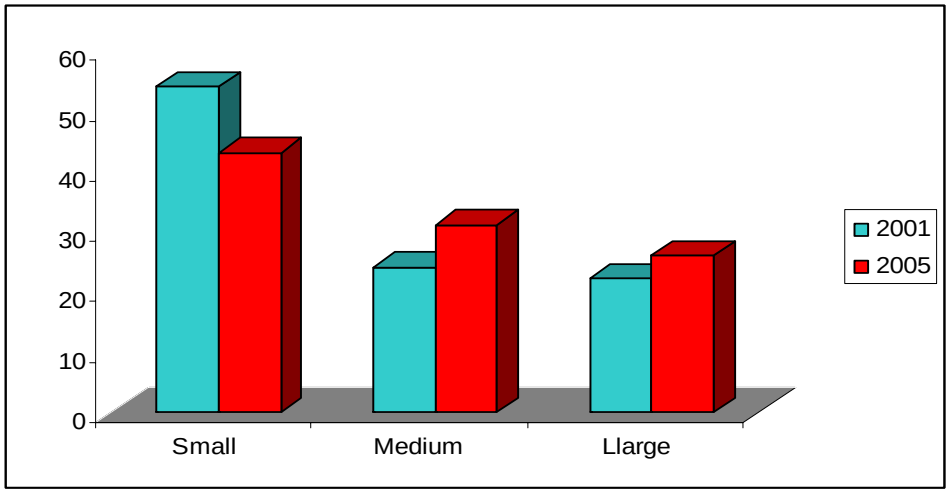
and training by post, and exports and imports for each establishment, among other useful information. The survey contains 115 questions with about 570 reply options.

Its data base covers 8180 establishments in 2001 and 6420 in 2005 classified under 54 and 85 industrial classes respectively[8]. It includes all large and medium-size firms and a random sample of small and micro enterprises. The fact that small and particularly micro establishments are misrepresented should not see this as an important deficiency, given that despite the fact that these establishments account for 91% of the total, they account for only 18% of total manufacturing employment and 4% of total value added, according to the 2003 Industrial Census. Neither they have an important role in international trade. Graph 1 shows that the main difference between both surveys falls in the higher proportion of smaller establishments in 2001 with simultaneously larger proportion of large and medium establishments in 2005.

[8] In order to build the panel data base we eliminated 31 industrial classes added in 2005 which were not present in the 2001 ENESTYC and 6 from the 2001 survey. In total we have 96 observations.

Graph 1

Size distribution of firms in the National Survey on Employment, Wages, Technology and Training (ENESTYC)



Source: ENESTYC Survey, 2001 and 2005.

There are no official statistics or *ad hoc* surveys that we know of that make it possible to compare, in a large sample population, the determinants of wages for both genders and the wage gap in Mexico. The advantage of the ENESTYC survey is that it makes it possible for us to analyze the determinants of wages by gender taking into account the export orientation of establishments and other pertinent industrial characteristics, such as skill composition of the labor force in each firm, capital-labor and wage-salary ratios, size, capital structure, and women's occupational share among others. The information available is gathered at the establishment level from which research can be carried out at the four digit level.

Most analysis about the female labor in industry have focused on *maquiladora* sector which is considered the pre-eminent export industry. As it is known this sector created in the 1970s expanded during the eighties and was further accelerated with the signing of Nafta. Nevertheless, the effect of trade reforms cannot be reduced to the

maquiladora sector. It is important to take in account that exports have increased also in the non *maquiladora* sector after the trade reforms and women have increased their share in the labor force. In fact, the manufacturing industry, which does not fall under this tax bracket, contributes 51% of all industrial exports, as was mentioned at the outset.

Although there is evidence of a gender wage gap in the maquiladora sector, over the past two decades maquila manufacturing hourly earning and non wage labor costs have risen relatively more than manufacturing national as Fleck (2003) shows. Following this author, *maquila* wages- although slower than inflation. grew more quickly than the minimum wage, and a review of the distribution of income for all employed and *maquila* employees shows that the income of *maquila* employees has less dispersion than the income of all employed. This does not imply that *maquila* workers are priviledged, since their real wages have fallen, but it suggests that the analysis of non maquila manufacturing may bring to light gender inequality on lower wage levels.

Before going into the econometric model, we analyze the descriptive statistics on industry average wages for men and women and the wage gap ratio in relation to share of female participation in total employment, export orientation, share of foreign firms in gross product, capital-labor and wage-salary worker ratios, and our control variable firm size from our sample. (See Table 2 in the annex for the definition of these variables).

Table 6

Average wages per year: 2001-2005

(2003=100)

Thousand pesos: 2003=100

	Men	Women	Men/Women
Export/output>25%	81,73	68,99	1,18
Export/output<25%	54,16	47,68	1,14
Foreign firms share in output>25%	53,82	47,70	1,13
Foreign firms share in output<25%	54,71	47,65	1,15
Female share >20%	55,50	39,73	1,40
Female share<20%	52,50	57,57	0,91
KLD > 650 thousand pesos	75,15	69,07	1,09
KLD < 650 thousand pesos	44,50	37,83	1,18
wage / salary workers ratio > 3	47,79	42,73	1,12
wage / salary workers < 3	59,75	52,03	1,15
Output growth rate			
>1.1%	62.90	55.68	1.13
<1.1%	45.43	39.68	1.14

Source: Authors' own estimations using data from ENESTYC, INEGI, 2001-2005

As was observed in section III, female share in the transformation industry is relatively low, however within manufacturing, it is higher, passing from 21.1% in 2001 to 29.8% in 2005. In average, the female share in total employment in the sample is 27% for export firms and 22.7% for non export in average for the period.[9] To the degree that greater female participation implies lower bargaining conditions in the firm, this share would have wage-depressing effects on both men and women. On a priori basis we do not find a specific reason for the male-to-female wage gap to go in any direction. The descriptive statistics analysis shows that a high female share in the industry does have a negative influence on men's salary, but not on women's. Thus, less inequality

[9] If our sample had considered maquiladora firms, this average would have gone up to 35%, since women's share in maquiladora firms is 50%.

may occur because male wages go down while female wages go up with a larger female share in industry.

Export orientation, measured by the export-output ratio, averaged 27.45% for the years 2001-2005. There is great heterogeneity among industries since exports are highly concentrated among certain Mexican firms and industries. There are conflicting hypotheses regarding the association between export orientation and wages. On one hand, export orientation is expected to be associated with lower industry average wages given the greater pressures to maintain or achieve international competitiveness (Seguino, 2000). However, in as much as most exporting firms have updated equipment, and need highly skilled labor, they can afford to pay higher wages to retain their labor force, since skilled labor is scarce in Mexico (Domínguez, 1993). In our opinion, the latter hypothesis likely applies in Mexico. As may be observed in the first two rows of Table 7, export firms pay higher wages to both men and women on average for the years 2001-2005. So we would expect this sign to be positive in the two corresponding equations. Trade orientation effect on the gender wage ratio is theoretically ambiguous as Berik (2000) argues. Some studies of *maquiladora* industry have pointed to the stressful working conditions and insufficient fringe benefits because of the relative lack of bargaining power of women and in general of unions in this industry (Grajeda y Duarte, 2002), so it could be interpreted that the same happens in all high exporting firms. However, it is uncertain whether the *maquiladora* sector has higher gender wage differences than the rest of industry. In any case, averages from our sample show very small differences in relation to the higher or lower export-orientation of industries (1.18% and 1.14% respectively).

Foreign direct investment increased after trade liberalization, but more so after NAFTA came into effect. Most of it went to the service (banks) and *maquiladora*

sector, but continued growing in national manufacturing: the average share of foreign firms in total manufacturing gross product (FDI/GP) in our sample passed from 23% in 2001 to 25 percent in 2005. Evidence from the 1970s and 1980s for Mexico shows that transnational subsidiaries had greater productivity and paid higher wages ((Fajnzylber, 1975; Casar, 1990), and a more recent study confirms the same trend (Brown y Domínguez 2004). Thus, one would expect that domestic firms pay lower wages to both men and women, and that is what indeed the descriptive statistics show in our sample (Table 6). As in the latter case, the relative effects of this variable on the gender wage ratio will depend on women's relative vulnerability to layoffs, that is, their relative bargaining power. As Berik (2000) explains, that in turn would depend on the nature of jobs staffed by female versus male workers and the gendered pattern of layoffs. In our sample, there is a lower male-to-female wage gap in those industries with a high share of output by foreign firms (1.13% and 1.15%) which implies that foreign firms pay higher wages to women than national ones.

The capital labor ratio was estimated as the ratio of the value fixed capital assets divided by the number of employees and workers for each industry. In principle, one would expect that firms with higher capital intensities (KL) have greater productivity and pay higher wages. Averages in Table 6 confirm this. Its effect on gender wage inequality depends on whether there is a gender difference in workers' ability to translate higher productivity into higher wages. Evidence for Mexico points again to the heterogeneity of Mexican firms. Based on the same sample, another study by Brown, Domínguez and Mertens (2007) identified two opposing groups of firms in this regard: one combining technological effort and decent labor conditions which result in both higher productivity and wages, and the other focusing only on technological improvements. As before, if men are better able to bargain in the high capital-labor

industries than women, then we would expect a higher capital–labor ratio to be associated with a lower gender wage ratio (i.e., greater gender wage inequality). The sample evidence show that establishments with high capital intensity pay higher wages, to both men and women, but the gender wage ratio is slightly higher in industries in the sample in which the capital-labor ratio is below average, suggesting that more traditional firms pay less to women in relative terms.

We have presented evidence of a skill premium after trade liberalization in 1988 in the Mexican economy. The relation of wages to salaries in the sample averages 40%. Average ratio of wage-salary workers is 3. A lower ratio may be interpreted as a proxy for greater skill level, and therefore is expected to be associated with higher average industry wages. Thus, we expect the wage–salary worker ratio to be negatively related to both women's and men's wages. However, given that women tend to play a minor role among skilled laborers and employees, the effect on the male-to-female wage ratio is most likely to be positive. Table 7 shows that industries with higher than average wage to salaried worker ratios, have smaller gender ratios (1.12 versus 1.15).

Lastly, in relation to the macroeconomic variable -the growth rate of gross production value- we should expect that wages have a positive association in both male and female cases. There is an important debate on the association between growth and inequality. Some authors pose that it is income equality in Asia that has aided growth (Ode Galor and Joseph Zeira 1993; Larraín and Vergara 1998). Seguino (2000) as we mentioned contends precisely the opposite, that is women's disadvantaged status, which works to lower their relative wages, has been a stimulus to investment, exports, and by extension, economic growth. Lastly Mitra-Kahn and Mitra-Kahn(2008) argue that the relationship between gender wage inequality and economic growth is complex and varies from one country to another depending on the country's level of industrialization being marked by non linearity. In as much Mexican exports have a

mixed nature, some being high-skill and some being labor intensive, we do not expect a specific sign associated with growth.

REGRESSIONS RESULTS

Given that the use of panel models obliges to test between Pooled, random (RE) and Fixed effects (FE), we run the three models and look for the best option. The first (Pooled Ols) omits the effects of the industrial classes and time. In contrast both RE and FE allow for heterogeneity across panel units and time, but confines that heterogeneity to the intercept terms of the relationship. The intercept in the regression is allowed to differ among individuals in recognition of the fact that each individual (unit) may have characteristics of their own in FE, also known as the least squares dummy variable model. FE are generally used when there is a correlation between the individual intercept and the independent variables. In contrast, RE models assume that the intercept of an individual unit is a random drawing from a much larger population with a constant mean value known as the Error Components model (Gujarati, 2003).

In order to choose an adequate econometric specification for our data and to control for unobserved heterogeneity, we proceed as follows. First, we test the null that the intercepts are equal for the industrial classes by using a Lagrange Multiplier test (Pooled OLS). Since this null is rejected for our data, a Haussman test is applied to determine whether the explanatory variables and the unobserved individual effects are correlated, see the results in appendix one. From these tests we conclude that the Fixed Effects Model was more appropriate for our information which implies that there are no significant temporal effects but there are significant differences among industries in the model.

For the last model (FE) we tested for heteroscedasticity with the Breusch and Pagan test and the null hypothesis for homoscedasticity was rejected in all cases. Thus our final results come from a Feasible Generalized Least Squares model (FGLS) which are shown below. Results for the panel model are depicted in table 8 . Next we proceed to analyse our results which are expressed in elasticities to make them comparable (see annex for complete table).

Female´s wages were positively associated with export orientation, the foreign firms` share variable and the capital labor ratio. The female share in total industry employment was not statistically significant nor the average growth rate of gross production value. Male's wages were determined positively by export orientation and the capital labor ratio and the average growth rate of gross value of production. Again, the female share in total industry employment was not statistically significant together with the foreign firms` share in output. Lastly, the male to female wage was associated positively with the female share in total industry employment, export orientation, the average growth rate of production value and negatively with the foreign firms` share in the value of production and the capital labor ratio.

Although not statistically significant in either male or female equation, our results on the sign of the coefficients of the female share in total industrial class employment in the male to female wage ratio suggests that a greater concentration of women in an industry affects them negatively, moreover the elasticity is the highest of all cases, ie an increase of 1% in the female share increases the gap by 0.19%. This is consistent with the fact that the larger part of women`s employment is unskilled labor in Mexican industry and implies that the feminization of industry pulls wages down relative to men.

The positive sign of the coefficient of export orientation in both male and female wages equation was expected from previous evidence. This result is opposite to what Berik (2000) found for Taiwan. Our results show that export orientation benefits more male wages relatively to female wages -with an elasticity of 0.11- thus it expands the gender gap.

On our proxy variables for the industrial restructuring process resulting from economic reforms, we had very satisfactory results with the capital labor ratio which was significant and positive for both men and women`s equations. As its coefficient is greater on the female regression than on the male´s, its effect on the gender wage gap is negative. In relation to the share of foreign firms in the value of production, it is positively associated with female`s wages. Its negative sign in the men to women´s wage ratio denotes that these firms discriminate less than its counterparts ie Mexican owned firms. This result contrasts with the Taiwanese and Asian case analysed by Berik (2000) and Seguino (2000) and Fleck `s result for *maquiladora* firms.

It could be thought that these negative results contradict the two first ones on the effect of trade reform on the gender wage gap. We think they do not necessarily do, since Mexican owned firms are a very heterogeneous set; smaller ones often employ non remunerated labor. A similar line of reasoning goes for capital intensive and labor intensive firms. More capital intensive firms using modern methods of production often have more systematic management of labor implying that they make no gender wage differences, while the labor intensive ones are very diverse in their managerial routines and therefore there is greater probability that smaller ones tend to pay differential wages by gender.

The coefficient of the average growth rate was positive in the male´s wages regression and the gender wage gap, although with a very small coefficient which is not

enough to confirm Seguino´s results on East Asia, but on the other hand following Mitra-Kahn and Mitra-Kahn (2008) the relative small elasticity suggests that Mexican high-skill manufacturing is far from predominant.

Given that the elasticities of the variables with a positive effect on the gender wage gap outweight those with the negative effect, we can say that our results are evidence of a deleterious effect of trade reforms on gender inequality.

Table 9

Regression results

Variable	2001-2005 Wage men	Wage women	Gap
Female Share	-0.08	-0.07	0.19
Standard error	(0.69)	(0.88)	(0.18)
probability	0.63	0.75	0.00
Export/Output	0.46	0.30	0.11
Standard error	(0.10)	(0.11)	(0.03)
probability	0.00	0.01	0.00
Foreign capital/output	0.05	0.12	-0.03
Standard error	(0.07)	(0.08)	(0.02)
probability	0.47	0.14	0.12
Capital/Labor	0.15	0.26	-0.08
Standard error	(0.00)	(0.00)	(0.00)
probability	0.14	0.03	0.00
Production growth	0.03	0.02	0.01
Standard error	(0.02)	(0.02)	(0.00)
probability	0.17	0.36	0.01
Constant	2.13	2.07	-0.14
Standard error	(0.29)	(0.37)	(0.07)
probability	0.00	0.00	0.04
Chi^2 test	33.8	21.58	
probability	0.00	0.00	0.00
N	46	46	46

Sources: our own estimation

5. CONCLUSIONS

This study investigated the differential effects of export orientation on wages of men and women, and the male-to-female wage ratio in Mexican manufacturing. As is known, in 1986 Mexico began trade liberalization reform with concomitant policy

measures to favor more fluid market behavior aiming at stimulating industrial firms to improve productive efficiency. The expectation was greater growth, employment, and welfare for the people. While there were some achievements in key macroeconomic indicators and export performance during this period, the growth record was far from outstanding: employment growth was low, boosting the informal employment sector. Furthermore, there was a downtrend of wages and worsening of income distribution. During these years, women's participation in industry increased, mainly in the exporting firms, but the greatest part of the female labor force remained in services and commerce, in which informal employment plays an important part. Contrary to expectations, evidence for recent years shows that increasing trade has not changed the fact that women predominate in lower-end jobs in industry.

Following the approach of Berik (2000), the analysis was carried out at four digit level with data provided by ENESTYC in order to examine the separate effects of export orientation, capital intensity, the share of foreign firms in industry, the female share in total employment in each industry and output growth. We performed a panel model with two years: 2001 and 2005.

On our opinion, the most important result obtained is that export orientation is associated positively with the male-to-female wage ratio, in other words increasing gender inequality. This is contrary to the expected effect of trade on inequality according to the neoclassical model and provides solid grounds for feminist arguments concerning the effects of export orientation: non-convergence between women and men is possible under trade liberalization (Gagatay, 2000). Although with a small coefficient our finding on the positive effect of output growth on the gender wage gap reinforces these arguments. As well we found a positive association of the share of women in total industry employment with the gender ratio which implies that when this share is

increased in any industry, female wages tend to be lower in relation to men`s wages. This result is consistent with the fact that women tend to work in a greater proportion as unskilled labor in Mexican industry.

Our results on the impact of the variables linked to the reforms of trade liberalization are consistent with the evidence for the Mexican economy provided by inequality analyses (Hanson, 2003; Cragg and Epelbaum, 1996). We have shown that average wages are determined by the institutional characteristics of the firm, and technology, all of which shape the respective bargaining power of groups of workers.

We must concede that our estimations have some shortcomings followed by the fact that both samples are not strictly comparable, since they have a different number of establishments and industry classification. Much work had to be done to make them compatible, however, we had to eliminate industrial classes, especially for 2005 loosing, probably valuable information. Much future work is needed to capture the dynamic effects of trade in our variables.

In spite of the above, in our opinion, our approach has been fruitful because it allowed us to identify the determinants of wages of both men and women and better understand the sources of inequality than if we had only concentrated on the gender wage gap.

REFERENCES

Angeles - Castro, Gerardo. 2007. Factors Driving Changes in Income Distribution in Post-Reform Mexico. *International Journal of Humanities and Social Sciences* 1 (1):1307-8046.

Aroche, Fidel and María Elena, Cardero. 2007. Cambio estructural comandado por apertura comercial. El caso de la economía mexicana edited by UNAM. México.

Artecona, Raquel y Wendy Cunningham. 2002. Effects of Trade Liberalization on the Gender Wage Gap in Mexico, edited by D. R. G. P. R. a. E. M. Network: The World Bank.

Berik Gunsele, Van der Meulen Yana and Joseph E.Zveglich 2004. International Trade and Gender Wage Discrimination: Evidence from East Asia. *Review of Development Economics* 8 (2):237-254.

Berik, Günseli. 2000. Mature Export-Led Growth and Gender Wage Inequality in Taiwan. *Feminist Economics* 6 (3):1 - 26.

Brown, Flor and Lilia Domínguez 2004. Evolución de la productividad en la industria mexicana: una aplicación con el método de Malmquist. *Investigación Económica* 249.

Brown, Flor, Lilia Domínguez and Leo Mertens 2007. La importancia del capital social en la mejora de la productividad: Caso de la industria manufacturera mexicana. *Revista Mexicana de Sociología*.

Cagatay, Nilüfer; Diane Elson y Caren Grown 2000. Introduction:Growth, Trade, Finance and Gender Inequality. *World Development* 28 (7):1145-1156.

Cardero, Maria Elena. 2000. The external relationship of the Mexican economy with the United States, and its implications beyond trade. *Mexico Beyond NAFTA Perspectives for the European debate*, M. Anyul, F, Punzo London: Routledge Studies in Development Economics.

Cardero, María Elena. 1999. El impacto del TLC en la mano de obra femenina en México. *UNIFEM*.

Cardero, María Elena. 2003. El empleo de las mujeres y la apertura comercial en México: una primera aproximación. *Economía y género*, P. Villota. Barcelona: Icaria

Casar, José. 1990. *La organización industrial en México*. México: Siglo XXI – ILET.

Cortés, Fernando. 2000. Crisis, miembros del hogar e ingresos. *Carta Demográfica de México*:35-36.

Cragg, Michael and Mario, Epelbaum. 1996. The Premium for Skills in LDCs: Evidence from Mexico. *Journal of Development Economics* 51 (1):99-116.

Domínguez, L. y F. Brown. 1998. *Transición hacia tecnologías flexibles y competitividad internacional en la industria mexicana*. México: Miguel Angel Porrua.

Domínguez, Lilia 1993. México. *Microelectronics and Third World Industries*, S. Watanabe. London: Macmillan Press.

Domínguez, Lilia y Flor, Brown. 2003. *Estructura de mercado y patrones de competencia en México* México: Miguel Angel Porrúa.

Fajnzylber, F., y T. Martínez. 1975. *Las Empresas Trasnacionales: Expansión a Nivel Mundial Y Proyección En La Industria Mexicana*. México: FCE.

Feenstra, Robert and Gordon, Hanson. 2001. Global Production Sharing and Rising Inequality: A Survey of Trade and Wages. *Handbook of International Economics*.

Galindo, Luis Miguel and Pedro José, Martínez 2001. Los números básicos que determinan el comportamiento de la economía mexicana. *Economía informa* 31.

Grajeda, Gabriela and Nora Elizabet, Duarte. 2002. Los puestos y los salarios de los hombres y mujeres en la industria sonorense: apuntes de dos maquiladoras de Hermosillo. *Las mujeres en la maquila*, G. Gabriela. Hermosillo, Sonora: El Colegio de Sonora.

Gujarati, Damodar N. . 2003. *Basic Econometrics*. New York: McGraw-Hill.

Hanson, Gordon. 2003. What Has Happened to Wages in Mexico since NAFTA? Implications for Hemispheric Free Trade. San Diego: University of California.

López, Julio 2001. Modernization, Heterogeneity and Employment in Mexico. *International Review of Applied Economics* 16 (2):1-55.

Mantey, Guadalupe. 2005. Políticas monetaria, cambiaria y fiscal en la adaptación de México al Consenso de Washington *La Economía Mexicana bajo el TLCAN*, J. L. Calva. Guadalajara Universidad de Guadalajara-UNAM.

Moreno-Brid J. C., J. Santamaría, J.C. Rivas Valdivia. 2005. Industrialization and Economic Growth in Mexico after NAFTA: The Road Traveled. *Development and Change* 36 (6):1095-1119.

Oliveira, de Orlandina y M. Eternod. 2000. La fuerza de trabajo en México: unsiglo de cambios. *Cien años de demografía en México*, G. d. L. y. C. Rabell. México: FCE.

Oostendorp, Remeo. 2004. Globalization and the Gender Wage Gap, edited by A. I. f. I. Development: World Bank.

Perrotini, Ignacio. 2008. Critical essays on the new monetary consensus: theory and empirical evidence, the case of Mexico, PHD thesis, Economía, Universidad Nacional Autónoma de México, Mexico.

Rendón, Gan Teresa. 2003. *Trabajo de hombres y trabajo de mujeres en el México del siglo XX*. 1a. ed. México: Programa Universitario de Estudios de Género.

Ros, Jaime and César, Bouillon 2001. Trade liberalization, growth, inequality and poverty. *Liberalización, Desigualdad y Pobreza: América Latina y el Caribe en los 90*: Ganuza Erique, Paes de Barros Ricardo, Taylor Lance, Vos Rob.

Ros, Jaime and Lustig, Nora Claudia. 2000. Trade and Financial Liberalization with Volatile Capital Inflows: Macroeconomic Consequences and Social Impacts in Mexico during the 1990s. In *Working Paper No. 18*. Santiago de Chile: CEPAL.

Seguino, Stephanie. 1996. Economic Liberalization, Export-Led Growth, and Gender Wage Differentials in South Korea and Taiwan. In *ASSA Meetings in New Orleans*. New Orleans.

———. 1997. Gender Wage Inequality and Export-Led Growth in South Korea. *Journal of Development Studies* 34 (2):102–32.

———. 2000. Accounting for Gender in Asian Economic Growth. *Feminist Economics* 6 (3):27 - 58.